

Workforce planning and management FIT in call centers

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One of the current challenges human resources professionals encounter in call centers is workforce planning and management. In this type of industry, labor costs reach up to a maximum of 60 per cent of the budget. Besides, the daily constraints in service levels add to conflict augmentation between essential business functions.

Currently, jobs in call centers have one of the highest labor jobs turnovers with rates between 35 and 40 per cent (Hughes *et al.*, 2019), surpassing the average rate of 15 per cent in other jobs (National Retail Federation Report, 2018).

According to Hughes *et al.* (2019), possible drivers for these situations are as follows:

- dissatisfaction with labor force and job scope;
- lack of challenges; and
- unrealistic employee expectations.

These issues may increase with the significant levels of uncertainty entrenched in high workloads and peak demands at flexible working schedules set by three common scenarios:

1. *Overstaffing*: The workload level may be lower than expected; most employees become idle, resulting in high costs.

2. *Understaffing*: The workload level may be higher than expected, leading to long and irregular waiting times by the clients.
3. *Staffing*: The workload level may be equal to expectations. Most employees are busy enough, leading to regular waiting times by the clients.

Proper schemes solutions demand knowledge on different factors to reduce opportunities for pitfalls, such as:

- amount of customers to be handled;
- workload expectations; and
- service-level efficiency.

Technology and workforce management

The call center industry is known for its labor-intensive structure through a flexible working schedule. Therefore, a reduction in labor costs will result in considerable savings in total value. Likewise, active working schedules can lead to mutual satisfaction among the management and the staff. In this sense, the business relationship should focus more on the effective use of labor, which is the most significant and valuable resource (Türker and Demiriz, 2018).

Data derived as a result of call centers operations might provide essential information to improve

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decision-making when facing workforce management difficulties. However, it represents a challenge to search, understand and put together to accomplish proper workforce management.

Informed decisions to exceeding results are needed and could improve for the implementation of an integrated FIT (Vega, 2018).

Forecast intelligence technology

FIT evolves by innovations in machine learning and decision-making algorithms (Vega, 2018). This technology ensemble a predictive model allowing for efficient workforce management in 95 per cent of the times, which helps to reduce the general levels of forecasting's uncertainty.

Also, FIT promotes efficient decisions with the integration of the following:

- *Component of data-driven support:* One of the many appealing attributes associated with forecast intelligence is the enhancement of specific employee key performance indicators (KPIs). These outcomes provide a view of trending employee behaviors that affect KPIs but were previously not available to management experience.
- *Ability to make actionable insights from a large quantity of information:* Once management gain visibility into how their employees and processes are performing against KPI benchmarks, such as average handle time, average wait time, service level or operational cost, they can use the insights for better informed operational decisions.

For example, forecast intelligence can help identify repetitive and simplistic tasks that could automate to gain service, cost efficiencies and reducing the levels of uncertainty that

could be rooted both in past events and future events.

Strengths of forecast intelligence technology

Uncertainty inherently makes the workload forecast more complex. Its quantification is a complicated process that results in numbers that only a precise FIT can analyze.

To simplify this process, FIT integrates the workload uncertainty next to past events experience into the decision-making process (Vega, 2018), reducing concerns of decisions based on highly uncertain data.

The implementation of FIT facilitates the right decision-making when focused on essential operational sub-tasks as follows:

- *Forecasting workloads (number of calls received in call centers) within specific periods:* Frequency and the number of requests received during the planning stage is the most critical sub-task to avoid understaffing/overstaffing problems.
- *Staffing:* Finding the required minimum number of operators converting the workload forecasted to the operator requirements at periodic levels.
- *Optimal shifts:* Changes to be activated (opened) are determined instead of merely assigning the operators to the available variations.
- *Schedules:* Operator-shift matching is made based on job performance constraints.

FIT offers the opportunity to reduce the effect of unexpected events while maintaining its strength to manage past events (Vega, 2018). Also, this technology considers other contingency factors increasing forecasting uncertainty (Vega, 2018):

- *Budget:* Division of labor, rules and regulations performance appraisal and budgeting procedures.
- *Marketing:* The result of a new advertising campaign or critical product line offered at different rates.
- *Eventualities:* Occurrence of a rare and unexpected event with dangerous effects; most challenging to forecast.

The management of these events results in a flexible working schedule planning based on two perspectives:

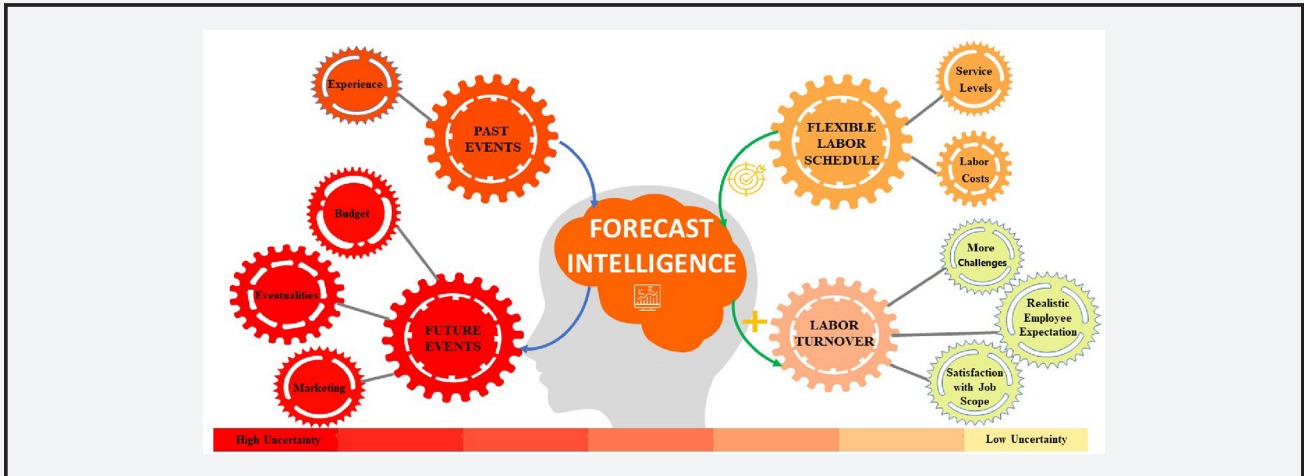
1. *Managers' view:* The design of forecast intelligence with high accuracy in the workload prediction, creating realistic expectations to manage a flexible working schedule and balancing the overstaffing/understaffing in the right staffing scenario.
2. *Employee view:* FIT accuracy and outcomes can give a more realistic expectation of the job, making it more significant for the organization.

Case study Workforce management with the forecast intelligence technology

Three different call centers (telecommunication, sales and education) in the Dominican Republic, FL-USA, and Puerto Rico encountered huge costs because of higher labor turnover ranging from 30 to 35 per cent. Call centers implemented FIT, (Figure 1), to compelling in real-time the more helpful staff for the flexible working schedules and constraints.

The two-year implemented FIT had an overall effectivity of 99.4 per cent (Vega, 2018); approximately 10 per cent better than other solutions. Human resources managers confirmed a labor turnover below 18 per cent. An improved yield of 12 per cent was achieved when compared before the adoption of FIT.

Figure 1 Workforce planning and management FIT in call centers



Conclusion

Workforce planning and management is a challenging task for all managers. The implementation of FIT facilitates decision-making and improves the daily operation of any business.

Highly exposed organizations as call centers may be the most beneficial. FIT, as an innovative technology in *machine learning* and *decision-making*, will automate most of the managers staffing tasks efficiently. Also, it will fulfill the need for a workforce to achieve optimal levels of efficiency in customer services.

In this way, the convergence of inconsistencies will generate a steady workplace achieving realistic expectations continuously. For human resources and other related managers, the findings of this research represent the ease of controlling workforce disruptions in

complex environments such as in the health, retailing and entertainment industry.

References

- Hughes, C., Robert, L., Frady, K. and Arroyos, A. (2019), *Managing Technology and Middle- and Low-Skilled Employees: Advances for Economic Regeneration*, Emerald Publishing.
- National Retail Federation Report (2018), available at: <https://nrf.com/> (accessed 1 August 2019).
- Türker, T. and Demiriz, A. (2018), "An integrated approach for shift scheduling and rostering problems with break times for inbound call centers", *Mathematical Problems in Engineering*, pp. 1-19, doi: [10.1155/2018/7870849](https://doi.org/10.1155/2018/7870849).
- Vega, R.E.P. (2018), "Forecast intelligence driving decisions on constrained dynamic staffing in call centers", available at: <https://search.proquest.com/openview/dbe34754c9a2bed056949d69f66ddb76/1?pq-origsite=gscholar&cbl=18750&diss=y> (accessed 15 July 2019).

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